EARLY DIAGNOSIS OF ORAL CAVITY CARCINOMAS: THE BEST PROGNOSTIC FACTOR

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Abstract

Oral mucosa neoplasms are most often pre-malignant lesions that evolved in squamous cell carcinoma (90% of cancers of the oral cavity). Tobacco and alcohol are the two most incriminated etiological factors. Other etiologies have also been mentioned, in particular the oncogenicity of certain viruses like the human papillomavirus (HPV). However, other types of cancer may occur mainly in young adults whose starting point is generally a salivary gland (10% of cancers of the oral cavity). From two clinical cases, squamous cell carcinoma and mucoepidermoid carcinoma, we describe the etiopathogenesis and the clinical characteristics as well as the histopathological particularities, diagnosis and prognosis of each of these entities. We also developped the interest of an early detection of the lesions that will provide the patient a better prognosis even though the therapeutic strategy is established in the best conditions.

Keywords: Oral carcinoma – diagnosis –pre-malignant lesion – squamous cell carcinoma.

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DIAGNOSTIC PRÉCOCE DES CARCINOMES DE LA CAVITÉ ORALE: LE MEILLEUR FACTEUR DE PRONOSTIC

Résumé

Les cancers de la muqueuse buccale sont le plus souvent des lésions pré-malignes ayant évoluées en carcinome épidermoide (90% des cancers de la cavité buccale). Tabac et alcool sont les deux facteurs étiologiques les plus incriminés. D'autres étiologies ont aussi été évoquées notamment l'oncogénicité de certains virus comme le papillomavirus humain. Toutefois d'autres types de cancers peuvent se manifester, surtout chez les jeunes adultes, dont le point de départ est une glande salivaire (10% des cancers de la cavité buccale). A partir de deux cas cliniques de carcinome épidermoide et de carcinome muco-épidermoide, nous décrivons l'étiopathogénie et les caractères cliniques ainsi que les particularités histopathologiques, diagnostiques et pronostiques de chacune de ces entités. Est aussi développé l'intérêt du repérage précoce des lésions qui fera bénéficier le patient d'un meilleur pronostic encore que la stratégie thérapeutique soit établie dans les meilleures conditions.

Mots-clés: cancer oral – lésions pré-malignes – carcinome épidermoïde – diagnostic.

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Introduction

Oral cavity neoplasms can have similar clinical manifestations, including pain, swelling, asymptomatic white or red lesion and many others [1]. Early diagnosis may be possible during examination of the oral cavity or discovered during dental work-up for another complaint. Studies showed that 90% of oral cavity neoplasms consist of squamous cell carcinomas (SCC). The remaining 10% of malignancies consist of carcinomas of minor salivary glands (3-5%), sarcomas of the soft tissues and the bone, malignant odontogenic tumors, malignant melanomas, non-Hodgkin lymphomas, and metastases from primary tumors located elsewhere in the body [2].

SCC is an epithelial tumor that arises from the oral mucosa. Traditional risk factors include chronic tobacco exposure, alcohol consumption and Betel quid chewing. Poor oral hygiene resulting in chronic periodontal disease as well as repetitive dental microtraumas have been also implicated. Many studies have tried to identify a causative role of Human Papillomavirus (HPV) infection in oral cancers, but no conclusive data could be drawn to this date. When SCC is identified, it is considered as a primary lesion of the oral mucosa and investigations should be done to rule out loco-regional spread [3].

The most common types of minor salivary gland carcinomas include mucoepidermoid carcinoma (MEC) and adenoid cystic carcinoma [4].

MEC is derived from ductal epithelial cells of the salivary gland and contains mucus-producing, epidermoid and intermediate cells. Although usually occurring in the parotid gland in the head and neck region, it is often found in the palate when a minor salivary gland is affected [5]. The differential diagnosis of MEC should be considered in the case of a painless, slow-growing, pale, bluish-purple lump, especially in the palate [6].

Several studies have tried to identify prognostic factors of minor salivary gland MEC and palatal SCC. These include age, tumor size, histopathological grade, clinical stage, perineural and vascular involvement, and lymph node or distant metastases [7]

In this paper, we present two cases of oral cavity lesions with the same location and clinical presentation but different histopathological types. Early diagnosis resulted in complete minimally-invasive resection of the lesions with no need for extensive reconstruction nor any adjuvant therapy. Consequently, the two cases had excellent oncologic and functional outcomes.

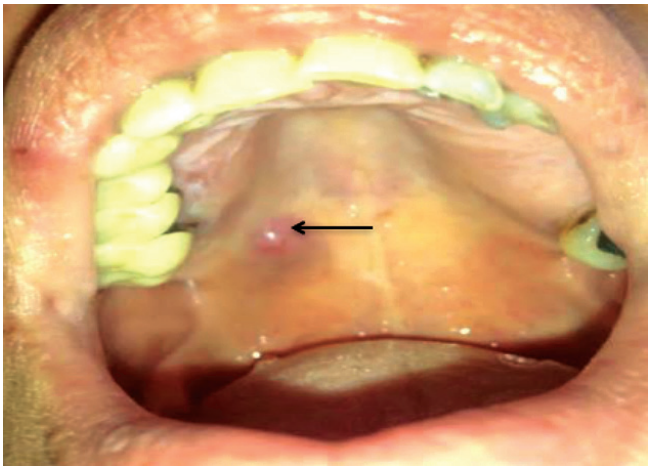

Fig. 1: A 2x1 cm violaceous indurated mass on the right side of the hard palate (black arrow).

Case 1

A 45-year-old female presented to our department with a 6-month history of an isolated painful lesion of the hard palate, which was slowly increasing in size. The patient's past medical history was unremarkable. Her social history was significant for chronic tobacco smoking (30 packs-years), but no alcohol exposure.

On physical exam, the lesion was located at the junction of the hard and soft palate facing the right molars. It was erythematous, indurated on palpation and measured 2 x 1 cm (Fig. 1).

She showed no improvement after a one-week course of antibiotics and a fine needle aspiration cytology (FNAC) was inconclusive. Contrast-enhanced CT scan showed no underlying bony invasion (Fig. 2).

An excisional biopsy under general anesthesia was performed and frozen section was in favor of a SCC. Subsequently, a wider resection was performed in safe margins (Fig. 3). Final pathology revealed a pT1 low-grade MEC.

The post-operative course was uneventful. The patient was kept on a liquid diet for a couple of days, then resumed a soft diet. Regular 3-month follow-up visits were recommended for the first year. Her latest follow-up at 18 months showed no evidence of disease recurrence.

Case 2

A 71-year old male, chronic tobacco smoker (35 packs-years) and daily alcohol consumer, presented with a 5-month history of a painful lesion located at the junction of the left anterior tonsillar pillar and the intermaxillary commissure. The clinical examination revealed a 2x2 cm round, homogenous, erythematous lesion with elevated borders (Fig. 4).

A biopsy was carried out with pathology results of poorly-differentiated SCC. A dedicated contrast-enhanced CT scan showed no enlarged lymph nodes (Fig. 5).

The lesion was resected under general anesthesia with a circumferen-

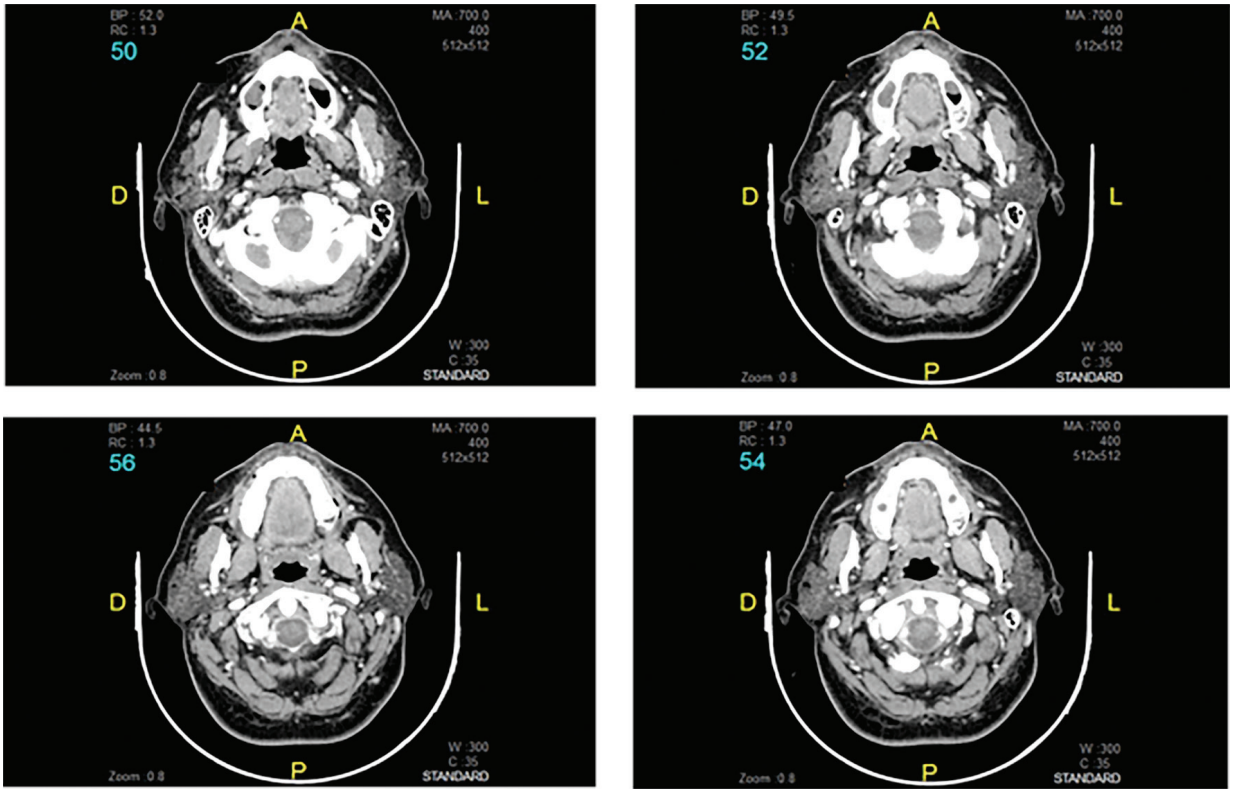

Fig. 2: CT scan showing no underlying bony invasion.

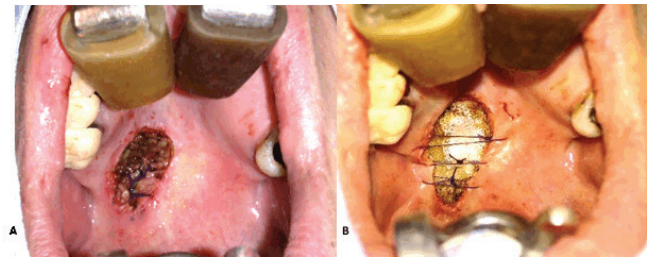

Fig. 3: A. Wide margin-surgical excision.
B. Final post-operative result.

tial 1 cm safety margin, preserving deeply the medial pterygoid muscle (Fig. 6). A buccinator flap, pedicled on the buccal branch of the internal maxillary artery, along with the Bichat's fat pad was used to close the defect (Fig. 7).

Final pathology revealed a pT1 poorly differentiated infiltrating SCC with clear margins and only one peri-neural invasion finding. Subsequently no adjuvant therapy was recommended.

The post-operative course was uneventful. The patient was kept with no oral intake for 4 days and was fed through a naso-gastric tube. He resumed a liquid diet on post-operative day 5, then a soft diet for a period of 10 days. The operative site was very clean with the buccinator flap looking very healthy. The 2-week follow-up showed a very smooth healing of the reconstructed soft palate, with no significant retractions of the inner cheek. Regular 3-month follow-up visits were recommended for the first year. The contrast-enhanced CT scan at 6 months and his latest follow-up at 18 months showed no evidence of disease recurrence.

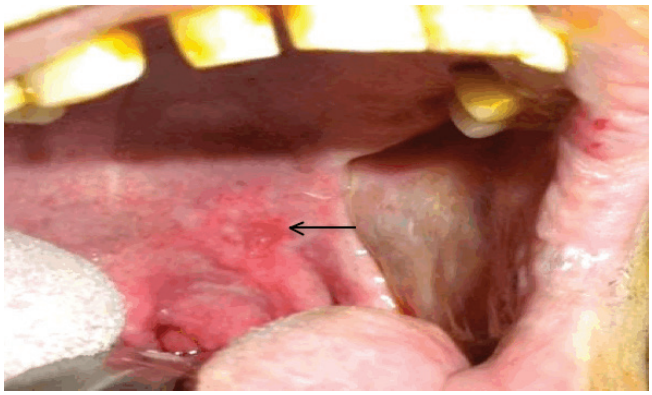

Fig. 4: A 2x2 cm erythematous and indurated lesion (black arrow).

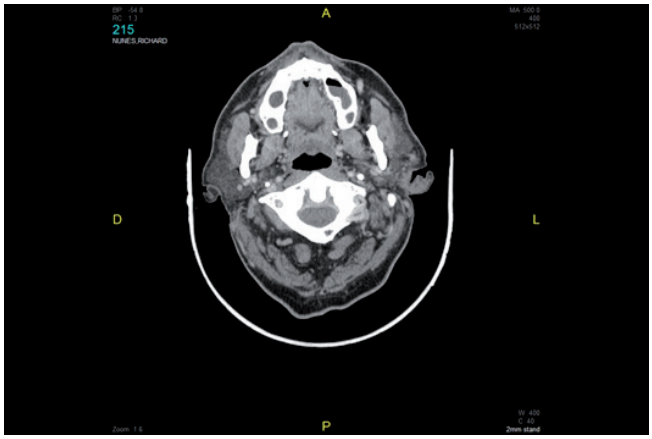

Fig. 5: Preoperative scan showed no radiographic abnormalities either at the primary site or in the neck.

Discussion

Oral cavity malignancies often have the same clinical presentation regardless of their histopathologic type. They can be symptomatic and manifests as a painful mass or asymptomatic and incidentally diagnosed on routine oral cavity examination. They can present as exophytic or ulcerative lesions [1]. Sometimes precancerous lesions are identified and these present either as white or red lesions, namely leukoplakias or erythroplakias, or as reticulated, lichenoid, lesions.

The most frequent histopathologic type of oral cavity malignancies is by far SCC of the mucosal lining followed by Adenoid cystic carcinoma and MEC of minor salivary glands [2, 4].

SCC represent 90% of oral cavity neoplasms. Most common sites include the ventral or dorsal aspects of the tongue, the floor of mouth and the oral vestibule. Less common sites include the palate and the retromolar trigone. It occurs in patients over a wide age range, but the majority present in the 6th through 8th decades, with a mean age of 60-65 years. They are unusual in patients younger than 20 years, although several cases have been described. Males are more frequently affected than females [3, 8]. The major risk factors include smoking, alcohol consumption and Betel quid chewing [1].

MEC of the oral cavity originates in the ductal epithelium of the major or minor salivary glands. In the minor salivary glands, MEC most commonly arises in the palate, followed by the lower lip, but it can also be found in the retromolar trigone, floor of the mouth, buccal mucosa and tongue [9]. The peak age of occurrence of MEC is the sixth decade of life. The majority of the studies in the literature support a female preponderance [10]; however, some publications have also found males to be more frequently affected [11].

Prognostic factors of these 2 types of tumors include tumor histologic grade, neural invasion, extension to soft tissue and tumor thickness, age at diagnosis and gender, adequacy of excision (microscopic residual disease), lymph node metastasis and extracapsular spread [7, 12].

These factors have shown a correlation with recurrence and survival rates. Among these factors, tumor stage appears to be the most important prognostic indicator [6, 10, 13, 14]. Advanced stage tumors have a worse prognosis, while early stage tumors have a better prognosis.

Local recurrence has been found to have no negative effect on overall survival; however, the need for further disfiguring surgery may be needed. The need for a complete excision with adequate margins is crucial in order to prevent local recurrence [11].

In other words, early detection of a tumor in its early stage is the best prognostic factor. Disease stage at initial presentation is a major determinant of survival, and the choice of treatment depends on the anatomical location and clinical stage.

In this paper we present 2 cases of oral cavity malignancies, a case of MEC and a case of SCC, with the same presentation. Minimally-invasive excision and reconstruction were the only needed curative treatment ensuring excellent oncologic outcome and functional results.

Unfortunately, most oral cavity SCC are diagnosed in advanced stages (stages III or IV) with a survival rate at 5 years of less than 50% and a cure rate of 30%. Untreated patients with metastatic disease survived for about 6 months. Only one third of the oral cavity SCCs are diagnosed in early stages (stages I or II). Studies showed

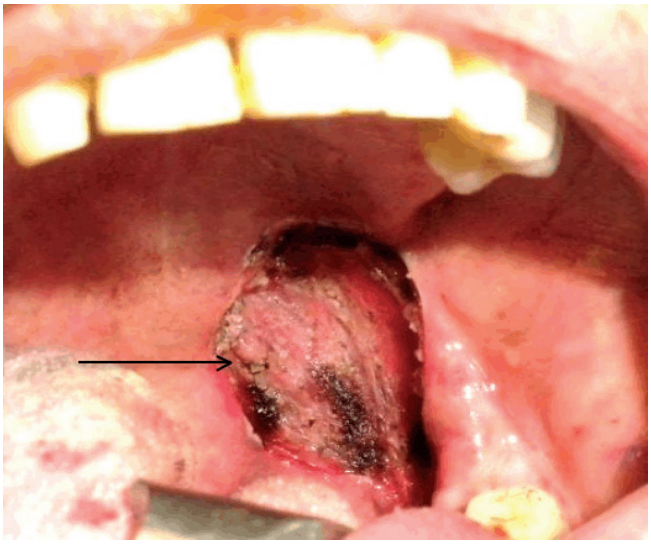

Fig. 6: Surgical defect after wide resection of the lesion, peeled off the medial pterygoid muscle (black arrow).

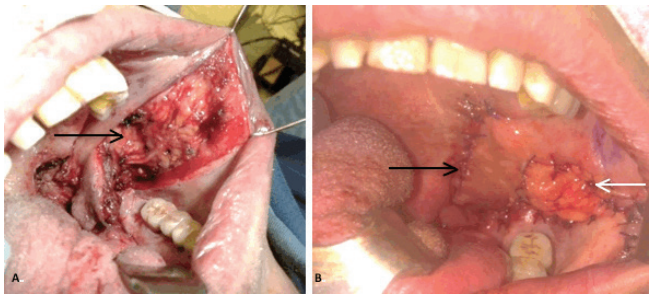

Fig. 7: A. Buccinator flap donor site (black arrow). B. Final result of the reconstructed site: Buccinator flap (black arrow) and Bichat's fat pad (white arrow).

that these patients have a better prognosis with cure rates of more than 80% for stage I tumors and 65% for stage II [15].

Tong et al. [1] found that a diagnostic delay longer than 2 months, T3 or T4 tumor, neck metastasis, and stage III or IV disease were independent adverse factors for subsequent survival rate and locoregional recurrence in patients with oral SCC. A delay in diagnosis shorter than 2 months was associated with a more favorable stage at diagnosis and a higher 2-year survival rate [1].

One of the major reasons of delay in diagnosing oral cancers was found to be, in a case-control study in 2010, administration of self-treatment provided by a pharmacy or use of over-the-counter products [16].

Moreover, when adequate early treatment of oral cavity tumors is applied, survival rates become more favorable. Li et al. showed high 5- and 10-year survival rates in MEC of the hard palate (78.7%) when lesions were diagnosed early and surgical excision was performed with adequate margins [4].

The fact that most oral cavity cancer cases presented in the majority of the studies with an advanced disease stage reflect a need for general public awareness of these diseases, their risk factors, and the importance of regular professional oral cavity examinations. Clinicians, especially general dental practitioners and oral surgeons, should be aware of the risk of oral cavity cancers in heavy smokers, drinkers, and betel quid chewers, and shouldn't hesitate to biopsy any suspicious lesion or unhealing ulcer in order to rule-out malignancy. (1) respectively. Multivariate analyses showed that a diagnostic delay longer than 2 months (hazard ratio [HR]=4.43; 95% confidence interval [CI], 1.26-15.51; P=.02

Oral cavity carcinomas are typically treated by surgery, including excision of the primary site and neck dissection, depending on the pathologic type. When diagnosed early and when complete resection can be obtained in safe margins, no adjuvant treatment is usually required. Otherwise an adjuvant radiation therapy or a chemoradiation therapy might be indicated. When surgery is not possible (irresectable tumor or inoperable patient), the latter two options could be indicated as exclusive therapies [4, 15].

In early diagnosed lesions, as in our two cases, limited surgery and reconstruction were oncologically sufficient and ensured an excellent quality of life. More advanced cases usually require disfiguring surgeries, more complex reconstructions and adjuvant therapies, thus compromising functional outcomes.

Conclusion

Oral cavity neoplasms can have similar presentations depending on their locations, SCC being the most frequent malignant tumor followed by MEC of minor salivary glands. Many prognostic factors have been identified and disease-free survival rate remains the main outcome of interest. Although the management of these tumors improves continuously, surgery is still considered as the primary option. Early diagnosis and prompt referral to a specialist will offer the best chance of cure in most patients avoiding disfiguring surgeries, complex reconstructions and the need for adjuvant therapies.

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